CS-727 **Topics in Computational Social Science (TopiCSS)**

West Robert

Cursus	Sem.	Type
Computer and Communication Sciences		Obl.

Language of teaching	English
Credits	2
Session	
Exam	Multiple
Workload	60h
Hours	**28**
Courses	28
Number of positions	

Frequency

Every year

Remark

Next time: Spring 2020

Summary

This is a seminar course. By reading and discussing an introductory book as well as research papers about computational social science, students will become familiar with core issues and techniques in the field.

Content

Data collected through digital systems, such as online social networks, search engines, mobile phones, apps, etc., offer great opportunities for addressing important research questions about individual as well as collective human behavior. Whereas such issues had previously been studied primarily by social scientists, the sheer size of modern social data sets, as well as the fact that they are produced within computational systems, requires computational ways of thinking about, and processing, them.
The goal of this seminar is to acquaint students with some of the fundamental questions and techniques arising in the context of computational social science.
We will explore the above topics simultaneously in two ways:

- We will read the book "Bit by Bit: Social Research in the Digital Age" by Matthew Salganik (available online for free).
- We will read research papers from computational social science that provide a deep dive into the topics discussed in the book.

Every week, we will focus on one book chapter and one accompanying paper (and sometimes additional complementary materials). All students will write a short summary and review of the respective paper, and one student will lead the in-class discussion, which will be about the paper as well as the book chapter etc. Beyond familiarizing themselves with research in the field, students will become better at assessing and critiquing scholarly work (by discussing and reviewing papers).
Through this course, students will obtain an overview of the research questions posed in computational social science, and of the tools and techniques available. Moreover, they will increase their ability to summarize and critique scientific papers.

Keywords

Computational social science, social networks, text analysis, natural language processing, information dynamics, machine learning

Learning Prerequisites

Required courses

No formal prerequisites, but we expect students to have a basic understanding of statistics, probabilities,

and machine learning

Learning Outcomes

By the end of the course, the student must be able to:

- Critique scientific papers
- Present other scholar's work
- Assess / Evaluate positive aspects of given scientific papers
- Identify negative aspects of given scientific papers

Resources

Bibliography

Previous editions: https://dlab.epfl.ch/teaching/
Introductory book read as part of the class: http://www.bitbybitbook.com/

Ressources en bibliothèque

- Bit by bit : social research in the digital age